

# REPAIR CONTENTS

# *RC*

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## 1. Repair Contents

## REPAIR CONTENTS

### NOTE

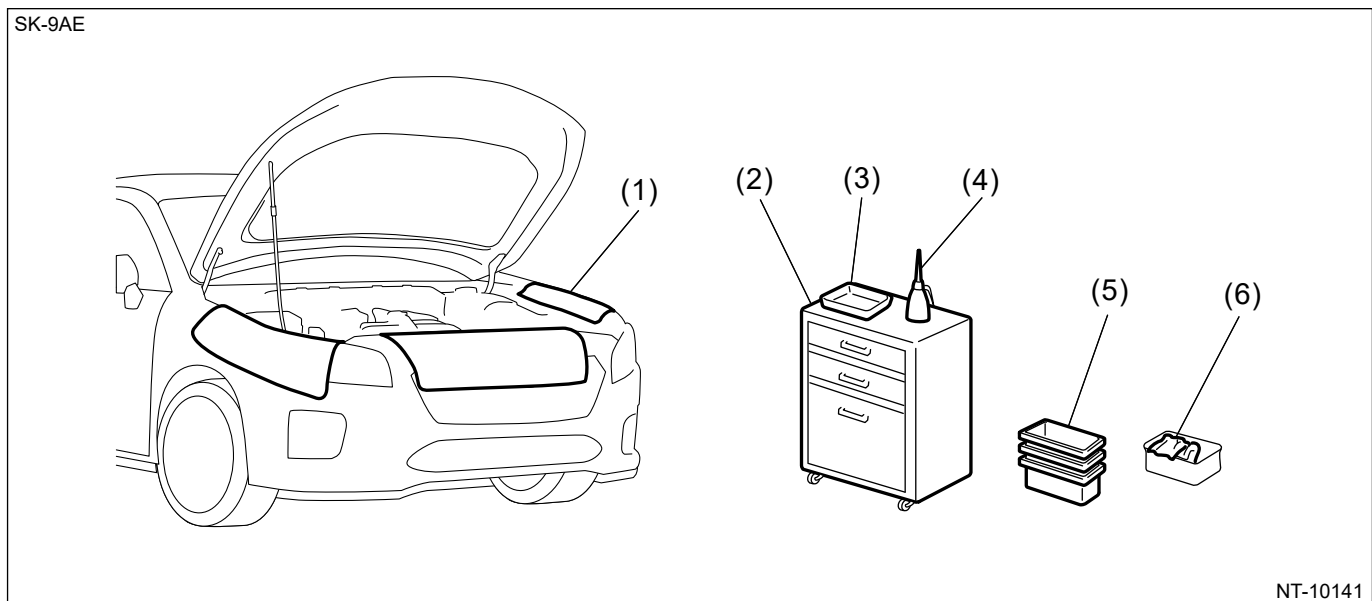
This section describes basic points that the service operator must understand before performing the service operation.

### 1. APPEARANCE

- Always wear clean work clothing.
- Wear a work cap and protective shoes during work.

### 2. PROTECTION OF VEHICLE UNDER MAINTENANCE AND PREPARATION OF TOOLS/EQUIPMENT

- Prior to starting service work, protect the vehicle body. (Grille cover, fender cover, seat cover and floor mat cover, etc.)
- Before performing the service operation, prepare tools, equipment, container box, grease and cloth etc.



(1) Fender cover

(2) Tools/equipment case

(3) Tray

(4) Oil

(5) Container box

(6) Cloth

### 3. SAFETY

- Before work, set the wheel stoppers to secure the vehicle.
- When performing work by multiple workers, call to each other to make sure that service operation is performed safely.
- Ventilate the room when starting the engine.
- When performing the service operation of high-temperature parts like muffler, or rotating parts like fan and other movable parts, be careful not to get burned or injured.
- For the jack-up and lift up, set the tool to the proper location to support the vehicle correctly. And use the safety device properly when lifting up.

### 4. SERVICE OPERATION




- By identifying the vehicle problems thoroughly before work, service operation will be performed effectively.
- Before removing parts, confirm the installation condition or the damage of the parts.
- To reinstall parts properly, leave a note of the condition before work as necessary.
- For a part which needs positioning, take appropriate action such as putting alignment marks.
- For a removed part, clean it as necessary and check for damage and defect before installation. If a part is damaged or does not work properly, replace it with a new part.
- Removing or installing the components or the connectors with the ignition switch ON will electrically impair them.
- Reconnect the harness connectors for each control module one or more minutes after disconnecting them.
- For installation of the bolt, nut, and screws, use tools suitable for each dimension, and use them vertically and securely.
- When installing/removing parts, be careful of handling accessory parts and harnesses.




## 5. SERVICE PARTS







- A removed part must be organized to avoid mixing up with similar parts. When same parts are used in multiple locations, such as pistons in engine, manage the parts by using labels with cylinder No. so that the parts are not installed to the wrong location.
- Always replace non-reusable parts such as gasket and O-ring with new parts.
- After work, have a customer confirm the replaced part.
- Use genuine parts for maximum performance and maintenance when conducting repairs. SUBARU CORPORATION will not be responsible for poor performance resulting from the use of parts except for genuine parts.





## 6. SETTING OPERATION FOR PARTS REPLACEMENT, REMOVAL/INSTALLATION

Operation list

Main replacement part / operation	Necessary operation	Phenomenon when not performed / disabled function	Reference
<ul style="list-style-type: none"> <li>• TCM</li> <li>• Transmission body</li> <li>• Control valve body</li> <li>• Transmission harness</li> <li>• Control valve body harness</li> <li>• Engine unit</li> </ul>	<ol style="list-style-type: none"> <li>1. Clear AT learning value (AT model)</li> <li>2. Module registration (when TCM is replaced.)</li> </ol>	<ul style="list-style-type: none"> <li>• Abrupt engine increase</li> <li>• Excessive shift shock</li> </ul>	 <a href="#">Ref. to TRANSMISSION (DIAGNOSTICS)&gt;Work Support&gt;LIST.</a>  <a href="#">Ref. to COMMON (DIAGNOSTICS)&gt;Unit Registration&gt;OPERATION.</a>
<ul style="list-style-type: none"> <li>• VSC (VDC) control module and hydraulic control unit (VSCCM&amp;H/U)</li> </ul>	<ol style="list-style-type: none"> <li>1. VSC (VDC) sensor midpoint setting</li> </ol>	<ul style="list-style-type: none"> <li>• VSC (VDC) system does not operate normally</li> </ul>	 <a href="#">Ref. to VEHICLE STABILITY</a>

Main replacement part / operation	Necessary operation	Phenomenon when not performed / disabled function	Reference
<ul style="list-style-type: none"> <li>Steering angle sensor</li> <li>Steering gearbox assembly</li> <li>Universal joint assembly steering</li> <li>Wheel alignment adjustment</li> <li>For other parts replacement, refer to the operation and adjustment procedures for each item.</li> </ul>	2. Module registration (when VSCCM&H/U and steering angle sensor are replaced)	(warning light illuminates) <ul style="list-style-type: none"> <li>Steering warning light</li> <li>Electric power steering system control</li> <li>Difference of steering effort between right and left</li> </ul>	<a href="#">CONTROL&gt;VSC (VDC). Control Module and Hydraulic Control Unit (VSCCM&amp;H/U). &gt;ADJUSTMENT &gt; VSC (VDC). SENSOR MIDPOINT SETTING MODE.</a>  <a href="#">Ref. to COMMON (DIAGNOSTICS)&gt;Unit Registration&gt; OPERATION.</a>
<ul style="list-style-type: none"> <li>Column assembly steering</li> </ul>	1. VSC (VDC) sensor midpoint setting 2. Steering sensor correction	If VSC (VDC) sensor midpoint setting was not performed <ul style="list-style-type: none"> <li>VSC (VDC) system does not operate normally (warning light illuminates)</li> <li>Steering warning light</li> <li>Electric power steering system control</li> <li>Difference of steering effort between right and left</li> </ul> If steering sensor correction was not performed <ul style="list-style-type: none"> <li>Electric power steering system control</li> <li>Difference of steering effort between right and left</li> <li>Yawing</li> <li>Electric power steering system does not operate</li> </ul>	 <a href="#">Ref. to VEHICLE STABILITY CONTROL&gt;VSC (VDC). Control Module and Hydraulic Control Unit (VSCCM&amp;H/U). &gt;ADJUSTMENT &gt; VSC (VDC). SENSOR MIDPOINT SETTING MODE.</a>  <a href="#">Ref. to POWER STEERING (DIAGNOSTICS)&gt;Work Support&gt;LIST &gt; STEERING</a>

Main replacement part / operation	Necessary operation	Phenomenon when not performed / disabled function	Reference
		normally (when replaced with a new part)	<a href="#">SENSOR REVISION.</a>
<ul style="list-style-type: none"> <li>Auto headlight beam leveler CM</li> </ul>	1. Initialization of the auto headlight beam leveler system	<ul style="list-style-type: none"> <li>AUTO HEADLIGHT BEAM LEVELER SYSTEM</li> </ul>	 Ref. to <a href="#">LIGHTING SYSTEM&gt;Auto Headlight Beam Leveler System&gt;OPERATION.</a>
<ul style="list-style-type: none"> <li>Regulator &amp; motor assembly (RH, LH)</li> <li>Glass assembly door (RH, LH), glass assembly front door partition, sash assembly front door</li> </ul>	1. Power window system initialization	<ul style="list-style-type: none"> <li>Door glass automatic open/close function</li> <li>Auto-reverse function</li> <li>Operation after ignition switch OFF</li> <li>Remote control of seats with driver's seat switch</li> </ul>	 Ref. to <a href="#">GLASS/WINDOWS/MIRRORS &gt;Power Window System&gt;OPERATION &gt;INITIAL SETTING.</a>
<ul style="list-style-type: none"> <li>Body integrated unit</li> </ul>	1. Customize	<ul style="list-style-type: none"> <li>Poor operation of each function</li> </ul>	 Ref. to <a href="#">BODY CONTROL(DIAGNOSTICS)&gt;Customize.</a>
<ul style="list-style-type: none"> <li>Combination meter</li> </ul>	1. Variant work	<ul style="list-style-type: none"> <li>Poor operation of each function</li> </ul>	 Ref. to <a href="#">INSTRUMENTATION/DRIVER INFO&gt;Combination Meter&gt;REPLACEMENT &gt;VARIANT WORK.</a>
<ul style="list-style-type: none"> <li>Stereo camera</li> </ul>	1. Camera adjustment and inspection	<ul style="list-style-type: none"> <li>EyeSight does not operate normally</li> </ul>	 Ref. to <a href="#">EyeSight&gt;Camera Adjustment, Inspection&gt;PROCEDURE.</a>
<ul style="list-style-type: none"> <li>Windshield glass</li> </ul>	1. Camera adjustment and inspection (model with EyeSight)	<ul style="list-style-type: none"> <li>EyeSight does not operate normally</li> </ul>	 Ref. to <a href="#">EyeSight&gt;Camera Adjustment,</a>

Main replacement part / operation	Necessary operation	Phenomenon when not performed / disabled function	Reference
			<a href="#">Inspection&gt;PROCEDURE.</a>
<ul style="list-style-type: none"> <li>Central gateway CM</li> <li>Engine control module (ECM)</li> <li>EyeSight security gateway CM</li> </ul>	1. Module registration	<ul style="list-style-type: none"> <li>Poor operation of each function</li> </ul>	 <a href="#">Ref. to COMMON (DIAGNOSTICS)&gt;Unit Registration&gt;OPERATION.</a>
<ul style="list-style-type: none"> <li>Data communication module (DCM)</li> </ul>	1. Server registration (CommCheck) 2. Immobilizer system registration	<ul style="list-style-type: none"> <li>Poor operation of each function</li> </ul>	 <a href="#">Ref. to ENTERTAINMENT &amp; MONITORING &gt;Telematics System&gt;OPERATION.</a>
<ul style="list-style-type: none"> <li>Passenger's seat</li> <li>Airbag control module</li> </ul>	1. [Rezero] for the occupant detection system	<ul style="list-style-type: none"> <li>Poor operation of each function</li> </ul>	 <a href="#">Ref. to AIRBAG(DIAGNOSTICS)&gt;Rezero.</a>
<ul style="list-style-type: none"> <li>Steering roll connector removing/installing</li> </ul>	1. Alignment of steering roll connector center neutral position (when reused)	<ul style="list-style-type: none"> <li>Poor operation of each function</li> </ul>	 <a href="#">Ref. to AIRBAG SYSTEM&gt;Roll Connector&gt;ADJUSTMENT.</a>

**Note:**



**For settings or other procedures for immobilizer related part, refer to "REGISTRATION MANUAL FOR IMMOBILIZER".**

**7. BATTERY****• ACTIONS TO TAKE AFTER REMOVING BATTERY OR DISCONNECTING GROUND TERMINAL OF BATTERY SENSOR**

When removing the battery or disconnecting the battery terminal, always be sure to turn the ignition switch to OFF and disconnect the ground terminal from the battery sensor first.

When removing the battery or disconnecting the battery terminal, power supply is cut off and the information stored in the computer memory is volatilized. Therefore, setting information of some devices is initialized to the factory default. The device and functions initialized by removing battery are as follows.

No.	Item	Job contents when connecting battery
1	Clock	Set the clock to the current time.
2	Center information display (CID)	<ul style="list-style-type: none"> <li>Audio (settings that the customer set): Set to the contents checked before disconnecting</li> </ul>

No.	Item	Job contents when connecting battery
		<p>the battery.</p> <ul style="list-style-type: none"> <li>Navigation system (settings that the customer set): Time setting is not necessary because the time information is received via GPS.</li> <li>Navigation system (settings that the customer set): Set the sound and other settings (items that were set in the selection) to the contents checked before disconnecting the battery.</li> </ul>
3	Steering lock system	<p>If the engine does not start, initialize the steering lock system. For the initialization procedure, refer to "Diagnostics with Phenomenon" of "KEYLESS ACCESS WITH PUSH BUTTON START SYSTEM (DIAGNOSTICS)".  <a href="#">Ref. to KEYLESS ACCESS WITH PUSH BUTTON START(DIAGNOSTICS)&gt;Diagnostics with Phenomenon&gt;INSPECTION &gt; ENGINE DOES NOT START.</a></p>
4	EyeSight	Set to the contents checked before disconnecting the battery.
5	Electronic throttle control system	Turn the ignition switch to ON, wait for 10 seconds or more, and start the engine.
6	Engine control system	<ul style="list-style-type: none"> <li>Let the engine run at idle until it fully warms up (the radiator fan turns 2 times or more) under no electrical load condition.</li> <li>After connecting the ground terminal to the battery sensor, wait for 10 seconds or more and turn the ignition switch to ON.</li> </ul>
7	Telematics	<p>Perform the Bluetooth connection procedure between head unit (audio without navigation) and smartphone.  <a href="#">Ref. to REPAIR CONTENTS&gt;NOTE &gt; Bluetooth CONNECTION PROCEDURE BETWEEN HEAD UNIT (AUDIO WITHOUT NAVIGATION) AND SMARTPHONE (ONLY FOR MODEL WITH TELEMATICS).</a></p>
8	Some of Diagnostic Trouble Codes (DTC)	—

#### ● GROUND TERMINAL REMOVAL OR INSTALLATION

**Caution:**

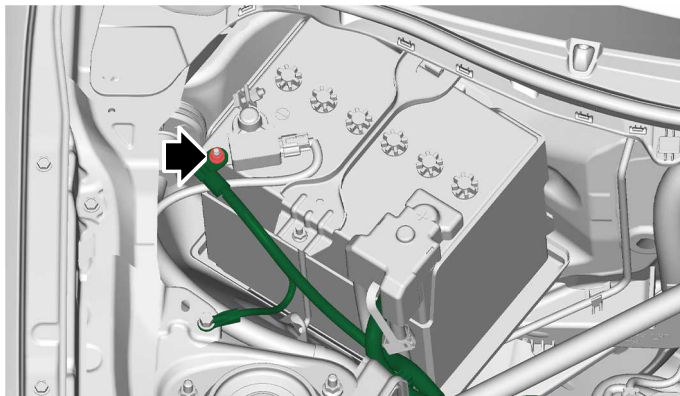
Power windows have an index function that slightly opens/closes window glass when a door is opened/closed. The molding may be damaged when the doors are opened or closed after disconnecting the ground terminal from the battery sensor when the glass is completely closed. Therefore, always disconnect the ground terminal from the battery sensor with the driver's or passenger's seat door open (with the glass lowered to a position that allows free door opening and closing).

1. Disconnect the ground terminal from battery sensor.

**Note:**

Open the trunk as necessary before disconnecting the ground terminal from the battery sensor.


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2. Connect the ground terminal to battery sensor.

**Note:**

- Install the battery sensor while holding it by hand to prevent rotating.
- Clean the battery cable terminals and apply anti-rust grease to retard the formation of corrosion.
- Connect the positive terminal of the battery, and then connect the ground terminal to the battery sensor.
- Some DTCs may be detected, so after connecting the ground terminal to the battery sensor, wait for 10 seconds or more and then turn the ignition switch to ON.
- After the battery is installed, initial diagnosis of the electronic throttle control is performed. Wait for 10 seconds or more after turning the ignition switch to ON, and then start the engine.
- For battery replacement procedures, refer to "Battery" of "STARTING/CHARGING SYSTEMS (H4DO)".  Ref. to STARTING/CHARGING SYSTEMS(H4DO)>Battery.


**Tightening torque:**

7.5 N·m (0.8 kgf-m, 5.5 ft-lb)

## 8. OTHER ADJUSTMENT OPERATIONS BEFORE DELIVERING THE VEHICLE TO CUSTOMER



**Caution:**

**If the delivery mode fuse is removed, the DTC related to the center information display (CID) is recorded. For the installation procedure of the delivery mode fuse, be sure to refer to "FUSE INSTALLATION" in "Pre-delivery Inspection".**  **Ref. to PRE-DELIVERY INSPECTION>PRE-DELIVERY INSPECTION (PDI) PROCEDURE > FUSE INSTALLATION.**

Due to service and parts replacement convenience, perform the following operations before delivering the vehicle to the customer.

No.	Item	Check operation	Adjustment operation	Additional adjustment operations when replacing parts
1	Positions of devices <ul style="list-style-type: none"> <li>Steering wheel</li> <li>Mirror assembly rearview inner</li> <li>Outer mirror</li> <li>Seat</li> <li>Air vent grille</li> </ul>	Is the device set to the same position when the vehicle was received from the customer?	Adjust the device to the similar position when the vehicle was received from the customer.	When removing/installing each device <ul style="list-style-type: none"> <li>Combination meter, instrument panel, steering column, etc.</li> <li>Mirror assembly rearview inner, roof trim, etc.</li> <li>Outer mirror, door panel, etc.</li> <li>Seat, floor carpet, etc.</li> <li>Air vent grille, instrument panel, console box, etc.</li> </ul>
2	Positions of switches <ul style="list-style-type: none"> <li>Wiper, light</li> <li>Illumination control</li> <li>Room light</li> <li>Seat heater (front)</li> </ul>	Is the switch set to the same position when the vehicle was received from the customer?	Set the switch to the same position when the vehicle was received from the customer.	When removing/installing each switch

## 9. PARTS CLEANING

**Caution:**

**Do not spray parts cleaner directly to rubber parts such as bushing or other resin parts.**

- Perform the operation in a clean location and use extra caution in dust proofing.
- Clean the items (except for assembly components) with steam, etc. before disassembly. During steam cleaning, wrap the air breather, oil level gauge, connectors, etc. with vinyl tape to prevent steam from entering inside the parts.
- Use an appropriate cleaning solvent.
- Do not clean rubber parts such as O-ring, gasket and oil seal with cleaning solution.

## 10. FASTENERS NOTICE

Fasteners must be tightened to the specified torque.

To prevent bolt and nut looseness, do not apply paint, lubricant, rust retardant or other substance to the installation surfaces of bolts, nuts, etc.

## 11. ABOUT SCREWS

Use an appropriate sized tool. Insert a screw vertically into the hole. Check for any loose screws after installation.

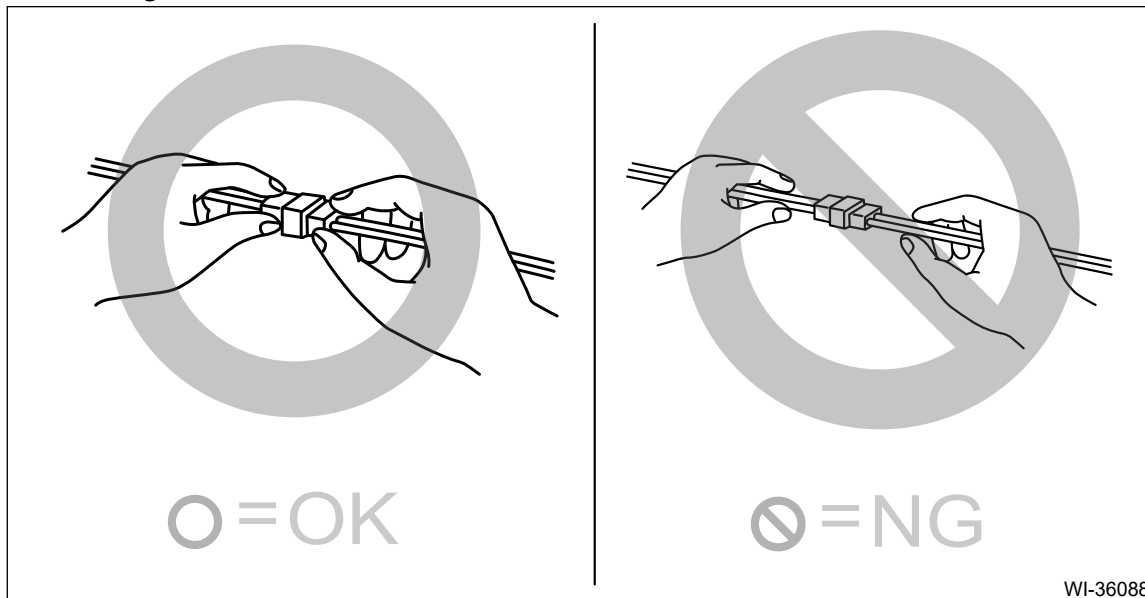
If improper tools are used or screws are inserted obliquely to the hole, the screws cannot be installed correctly, which may result in insufficient tightening force or damage on the hole.

## 12. STATIC ELECTRICITY DAMAGE

Do not touch the control modules, connectors, logic boards and other such parts when there is a risk of static electricity. Always use a static electricity prevention cord or touch grounded metal for the elimination of static electricity before conducting work.

## 13. TROUBLESHOOTING OF ELECTRICAL SYSTEM

1. Always refer to "CAUTION" of "General Description" in the same models service manual before starting the diagnostics and repair.
2. Always refer to the cautions of each section when diagnosing and repairing each system and component.
3. The battery cable must be disconnected from the battery sensor ground terminal after the ignition switch is set to the OFF position, unless otherwise required by the diagnostics.
4. When disconnecting a connector, do not pull the harness, but pull while holding the connector housing.



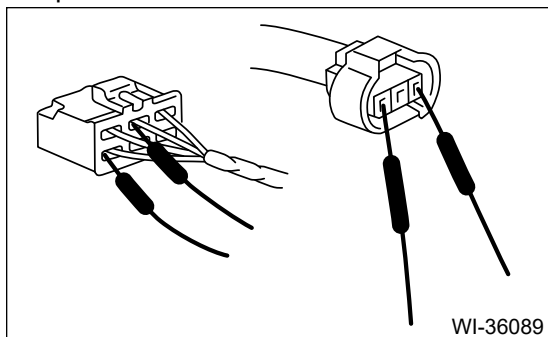
5. Confirm the locking shape completely before disconnecting a connector. In addition, firmly push in the connector until a click sounds when connecting a connector.
6. Be sure to prevent water or oil from contacting the connector terminals except for the integrated connector.
7. When checking continuity between connector terminals, or measuring voltage across the terminal and ground, always touch tester probe(s) to terminals from the harness side.  
When measuring the waterproof type connector terminal voltage, or the resistance between the terminals, use the check board.  
If the probe is too thick to gain access to the terminal, do not push it in forcibly but use a mini test lead.


8. When measuring the voltage or resistance of individual sensors or all electrical control modules, use a tapered pin with a diameter of 0.6 mm (0.024 in) or less and touch it to the tip of terminal. Never insert the tapered pin into the terminal at this time. Doing so may cause internal deformation and a malfunction can occur.

**Caution:**


**If a taper pin or the like has been inserted into the connector terminal, replace the connector.**

9. To check waterproof type connectors (which are not measurable from the harness side), touch tester probes on the terminal side and be very careful not to bend or damage the terminals.



10. Securely fasten the harness with clamps and clips so that the harness does not interfere with the body end parts, edges, bolts or screws.
11. When installing a harness and a component, be careful not to catch them on the harness.
12. Sensors, relays, units, etc., are sensitive to strong impacts. Handle them with extra care so that they are not dropped or mishandled.
13. When inspecting the airbag system, in order to avoid malfunction, always refer to "CAUTION" of "General Description" of the airbag system in the same model's service manual.  [Ref. to AIRBAG SYSTEM>General Description>CAUTION.](#)

## 14. FUSE

For the installation procedure of the delivery mode fuse, be sure to refer to "FUSE INSTALLATION" in "Pre-delivery Inspection".  [Ref. to PRE-DELIVERY INSPECTION>PRE-DELIVERY INSPECTION \(PDI\) PROCEDURE > FUSE INSTALLATION.](#)

## 15. IMMOBILIZER RELATED PART

- Do not replace the immobilizer related parts with the parts from other vehicle.
- Registration of the immobilizer is necessary when an immobilizer-related control module has been replaced. For detailed operation procedure, refer to the "REGISTRATION MANUAL FOR IMMOBILIZER" provided as a separate volume.

## 16. LIFT AND JACK

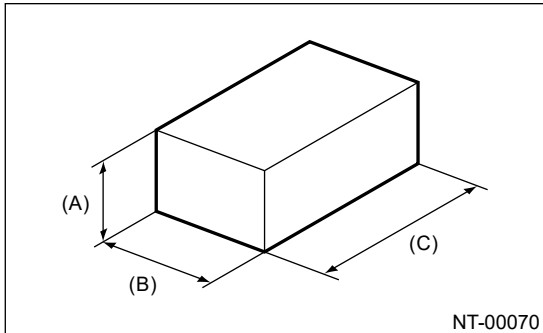
When using a lift or shop jack to raise a vehicle or using rigid rack to support a vehicle, always follow instructions concerning jack-up points and weight limits to prevent the vehicle from falling, which could result in injury. Be especially careful that the vehicle is balanced before raising it. Be sure to set the wheel stoppers when jacking-up only the front or rear side of the vehicle.

**Caution:**

**Select the lift attachment so that the side sill does not contact the lift arm.**

**Note:**

- When using a lift, follow its operation manual.
- When the spoiler assembly side contacts the lift arm, use a lift attachment.
- Do not work or leave unattended while the vehicle is supported with jack, support it with rigid racks.
- Be sure to use the rigid racks with rubber attached to cradle to support the vehicle.
- When using a lift, use an attachment or something similar.
- When using a plate lift, use a rubber attachment. Place the attachment to the specified position of the vehicle, by adjusting front/rear and left/right sides accordingly so that it does not interfere with the under cover or other parts.



(A) 80 mm (3.1 in) or more

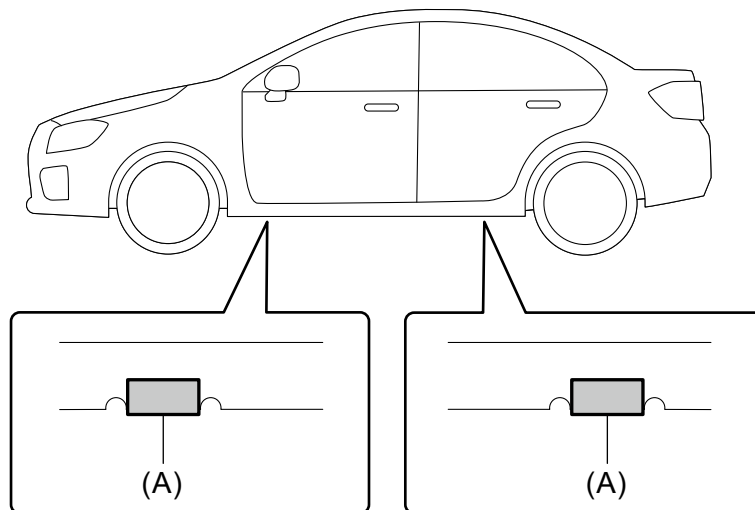
(B) 80 — 100 mm (3.2—3.9 in)

(C) 120 — 200 mm (4.7—7.9 in)

- Align the cushion rubber center part of plate lift with the center part of rubber attachment.
- Do not use the plate lift whose attachment does not reach the supporting locations.

### • SUPPORT LOCATIONS

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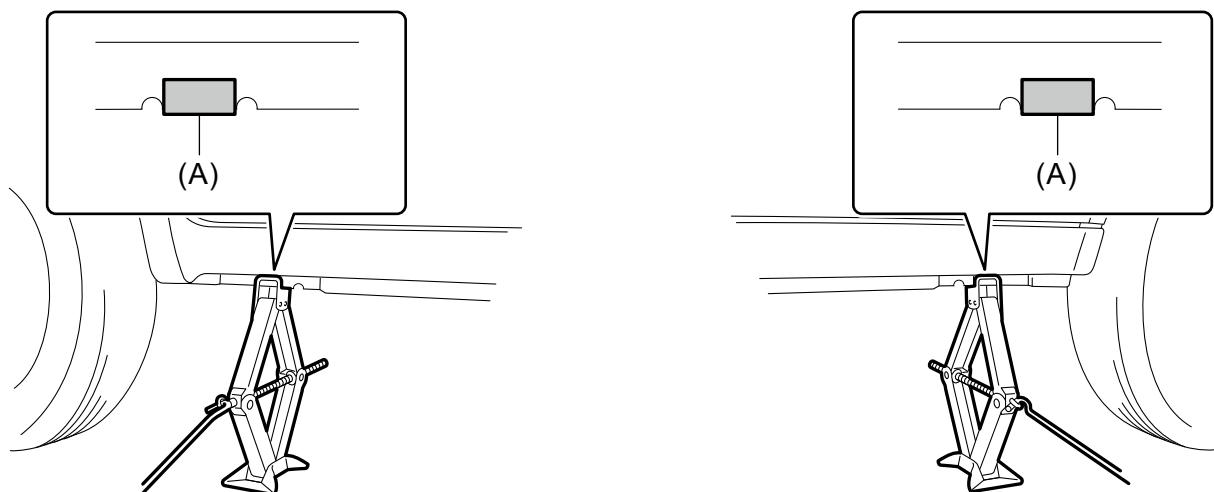


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(A) Jack-up point

### • PANTOGRAPH JACK

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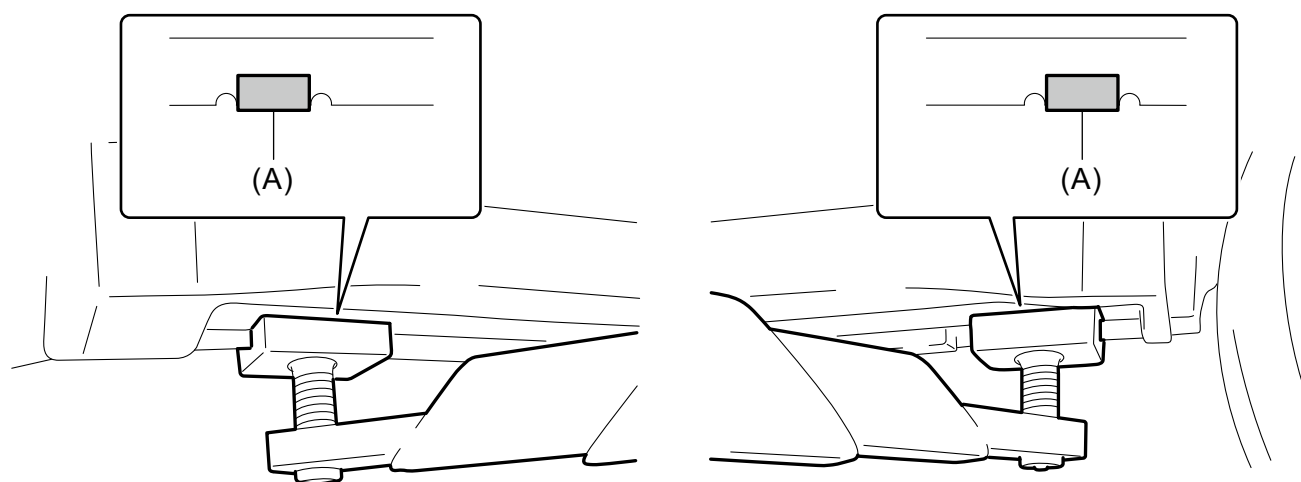
NT-10431

(A) Jack-up point

**• LIFT****Caution:**

Depending on the type of the two-post lift, the spoiler assembly side may contact the arm. In such a case, use the attachment of the regular option for the two-post lift.

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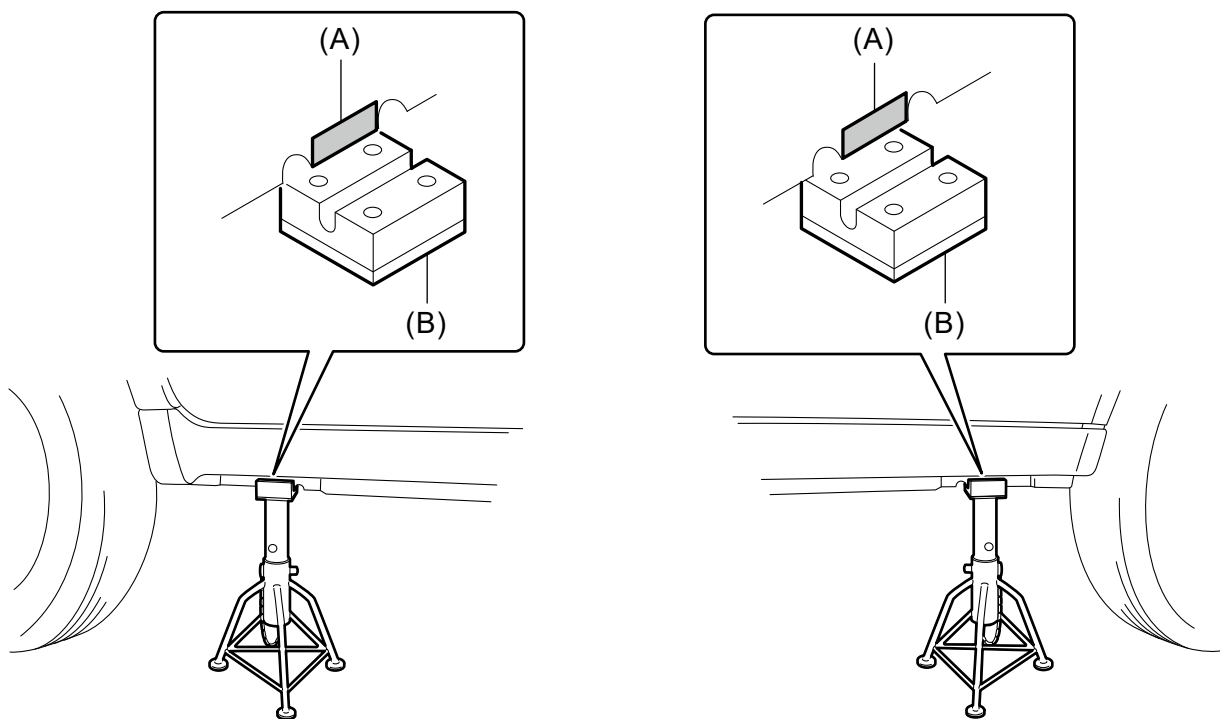


NT-10430

(A) Jack-up point

## ● RIGID RACK

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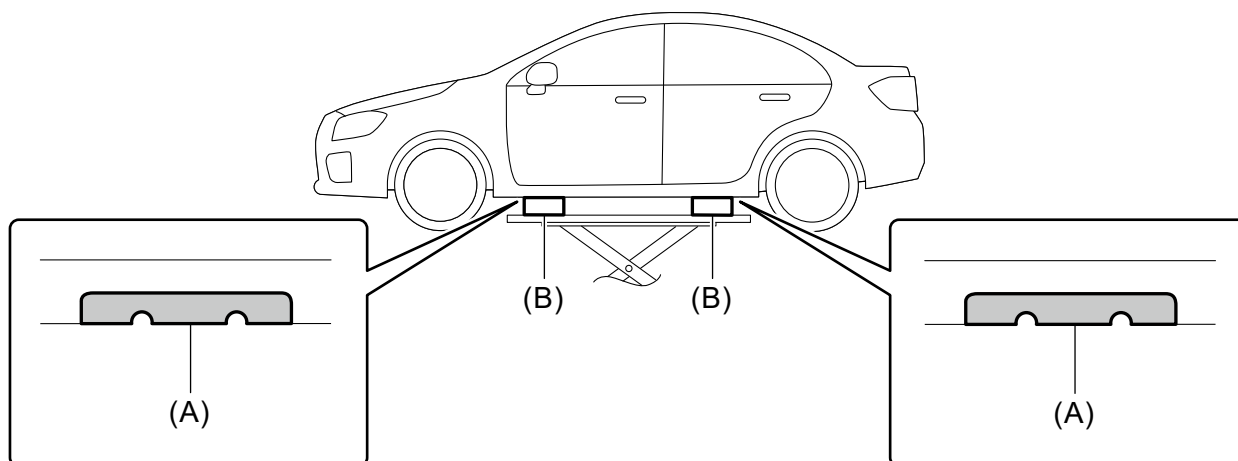
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(A) Jack-up point

(B) Attachment

## ● PLATE LIFT

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NT-10428

(A) Jack-up point

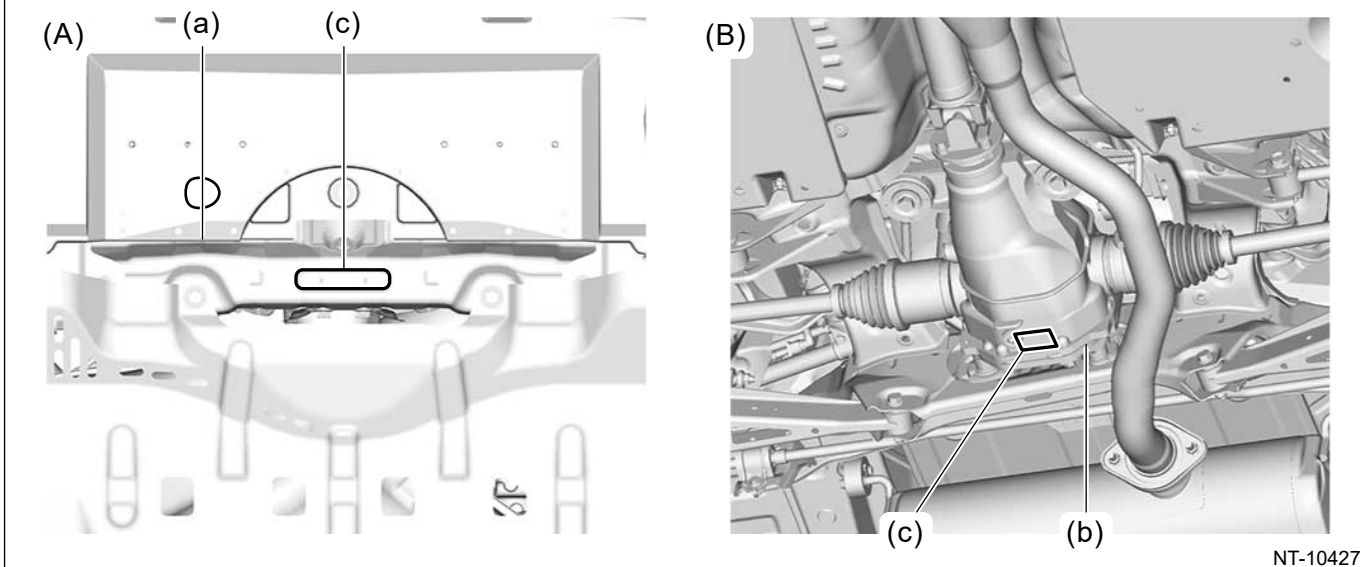
(B) Attachment

## ● JACK-UP POINT (WHEN USING A GARAGE JACK)

**Caution:**

**If jacking up the front side of the vehicle, make sure that the jack is attached at the center of the frame, not at the end.**

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(A) Front


(B) Rear

(a) Frame

(b) Rear differential

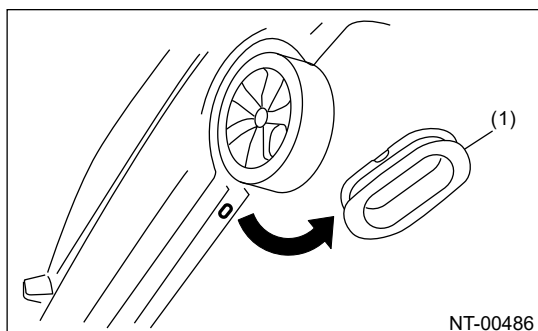
(c) Jack-up point

**17. TIE-DOWNS****Caution:**

**If any of the following conditions is met, the headlight beam may deviate. If the headlight beam deviates, perform fuse resetting.**  **Ref. to [LIGHTING SYSTEM>Auto Headlight Beam Leveler System>OPERATION > FUSE RESET.](#)**

- **Difference has occurred to the angle of road surface between when the ignition switch is turned to OFF and when the ignition switch is turned to ON.**
- **Difference has occurred to the angle of road surface between when the ignition switch is turned to OFF and when the vehicle speed is 0 km/h (0 MPH).**

Tie-downs are used when transporting vehicles. Remove the grommet of the rear tie-down hole and install the tie-down only to the specified locations on the vehicle.



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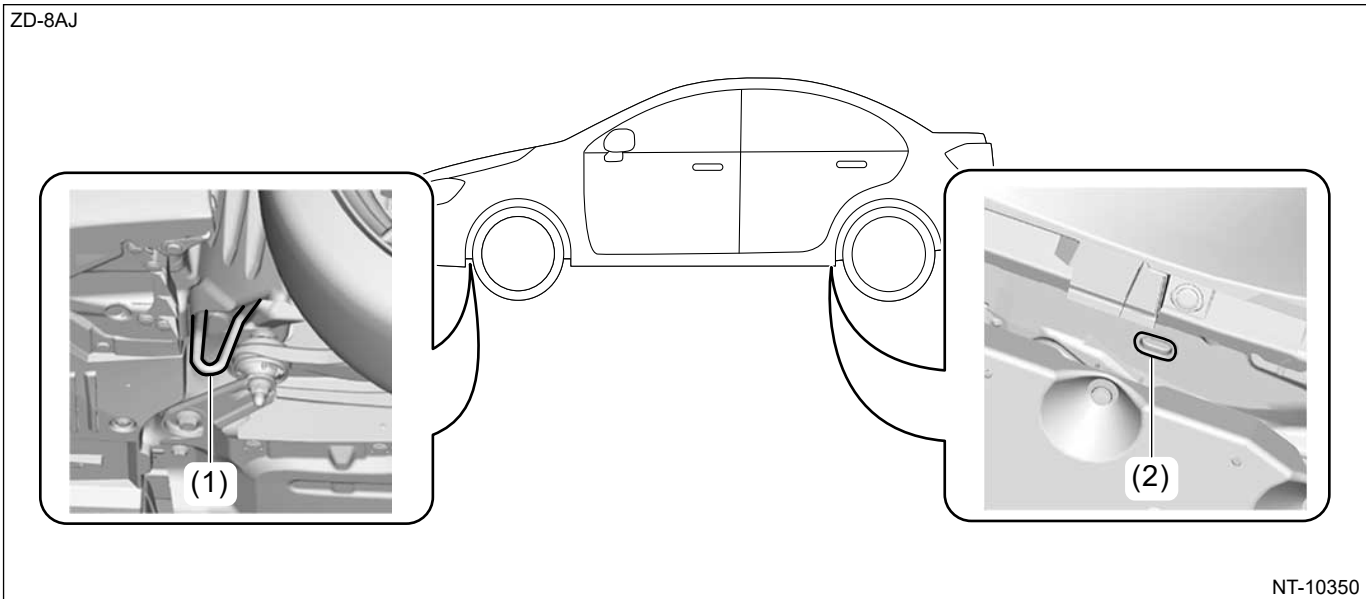
(1) Grommet

## ● TIE-DOWN LOCATION

### Caution:

**Make sure that the rear tie-down hole is firmly plugged with the grommet after the rear tie-down hole is used. Otherwise, dust, smell, etc. may come into the passenger compartment indirectly from the rear quarter, via the side sill from the rear tie-down hole.**

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(1) Front tie-down hook

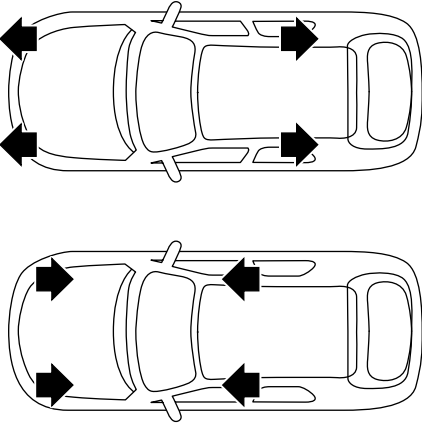
(2) Rear tie-down hole

## ● CHAIN DIRECTION AT TIE-DOWN CONDITION

### Caution:

- Pull the front and rear of the vehicle in the opposite direction, and pull the left and right of the vehicle in the same direction.
- Do not pull the chain except for the following recommended patterns.



	Recommended
Tie-down direction	  NT-00214

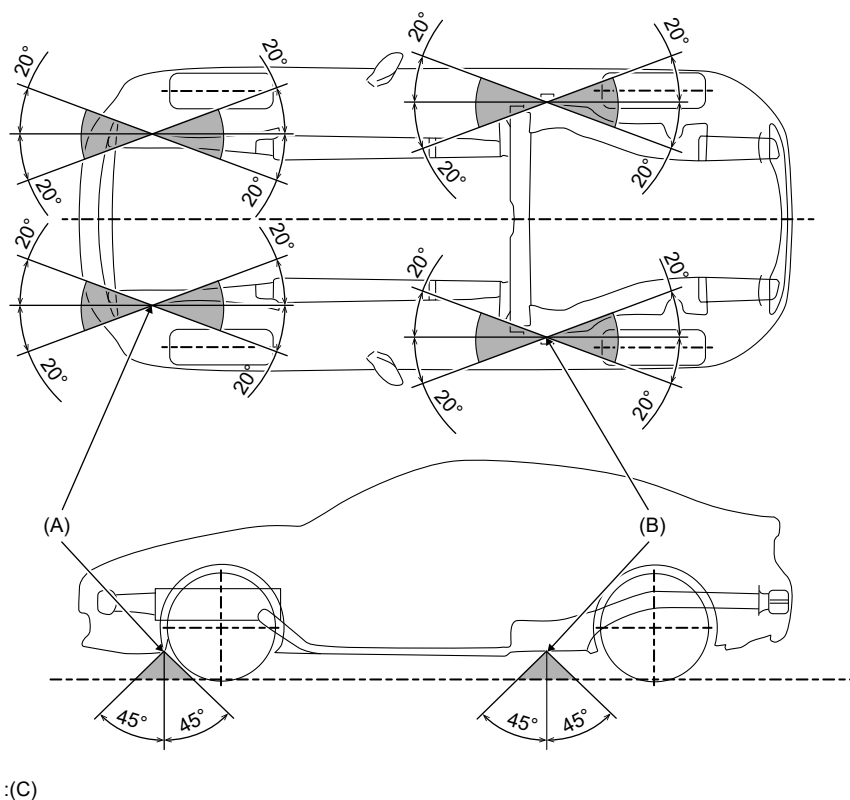
● TIE-DOWN RANGE

- For ground transportation
- Tie-down at 4 locations

**Caution:**

**When the vehicle is tied down toward the vehicle inside, hook the hooks on the rear tie-down holes from vehicle inside. When the vehicle is tied down toward the vehicle outside, hook the hooks from vehicle outside.**

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(A) Front tie-down hook

(B) Rear tie-down hole

(C) Chain pulling range at tie-down condition

- Tie-down at 2 locations

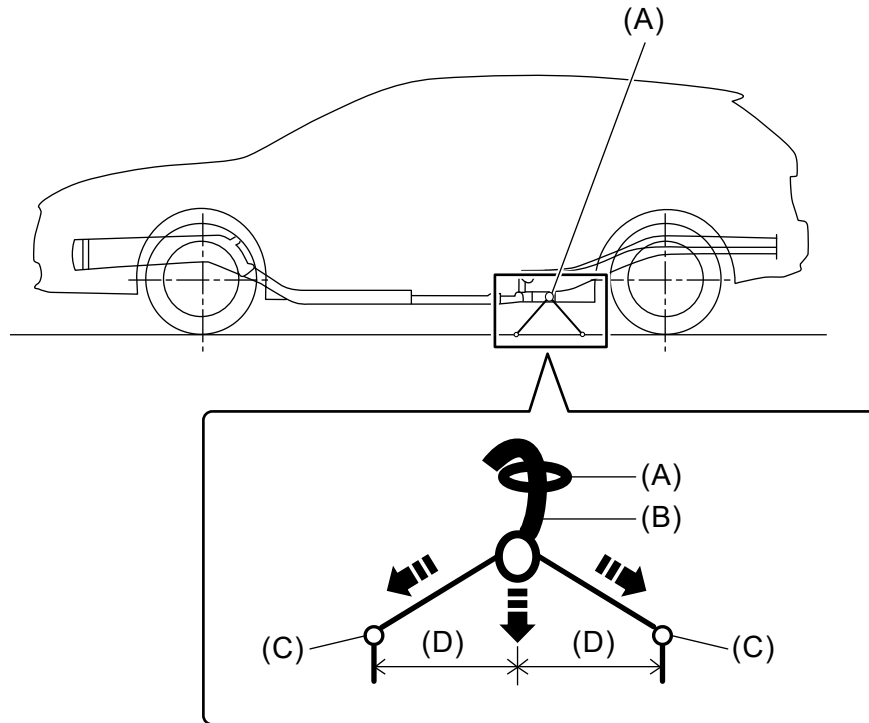
**Caution:**

**Pull the tie-down hook rope evenly to the front and rear side. Do not hook the hooks outside the wheelbase to avoid up/down pitching.**

**Note:**

**The length (D) should be the same.**

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(A) Rear tie-down hole

(C) Hook

(D) Rope length

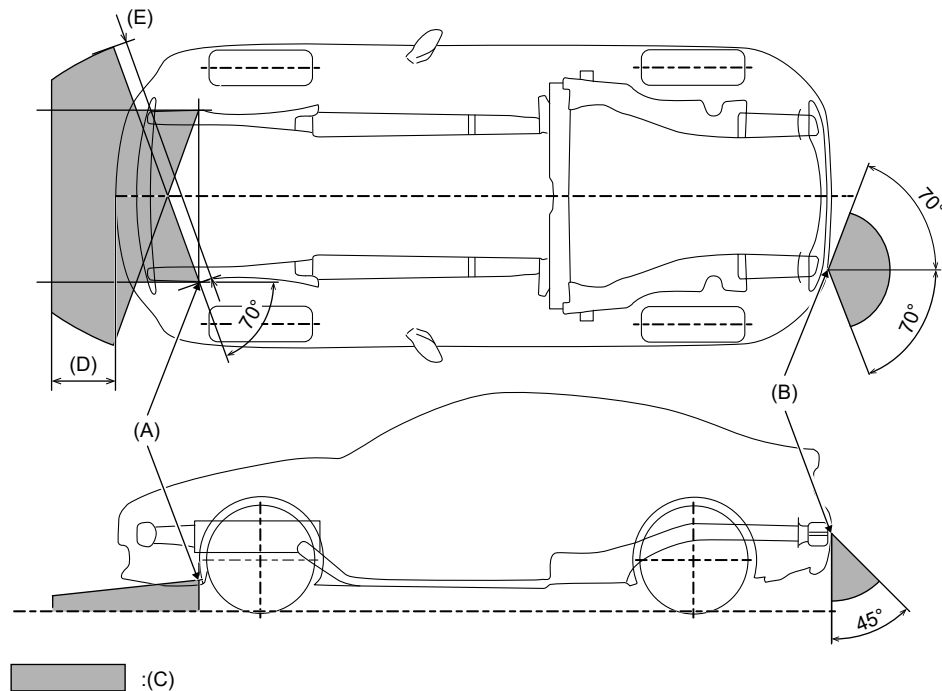
(B) Tie-down hook

For sea transportation

**Caution:**

**Hook on the front tie-down hook from vehicle inside, and tie down toward vehicle inside. Also, ensure that the open part of the hooks engaged with the front tie-down hook and the towing hook (eyebolt) faces downwards in order to prevent dropping off. The towing hooks (eyebolts) are exclusively used for towing and sea transportation tie-down, and do not use them for ground and freight transportation.**

ZC-6\*\*



NT-10359

- (A) Front tie-down hook      (C) Chain pulling range at tie-down condition      (E) 1,500 mm (59.1 in)
- (B) Towing hook (eyebolt)      (D) 400 mm (15.7 in)

### ● VEHICLE SINKING VOLUME AT TIE-DOWN CONDITION

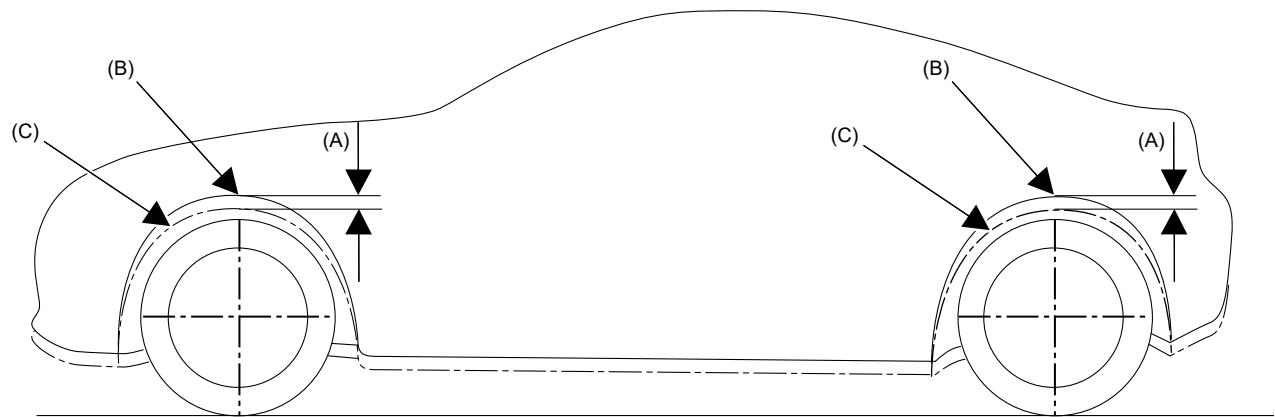
#### Caution:

**The vehicle sinking volume at tie-down condition should be less than 50 mm (2 in) and make sure to fix the vehicle securely.**

**Check to see if the tensions of chains or belts at tie-down condition are appropriate in the following procedures.**

1. Before tie-down, measure the distance between the highest tire point and highest arch point at the center of wheel.
2. After tie-down, measure the distance between the highest tire point and highest arch point at the center of wheel.
3. If the distance (A) between the measured value of 1. and 2. above is less than 50 mm (2 in), it is judged as OK. If the distance is 50 mm (2 in) or more, it is judged as NG because the tension is too high.

ZC-6\*\*



NT-10358

(A) Vehicle sinking volume at tie-down condition      (B) Arch position before tie-down      (C) Arch position after tie-down

### NOTES FOR THE USE OF TIE-DOWN HOOK

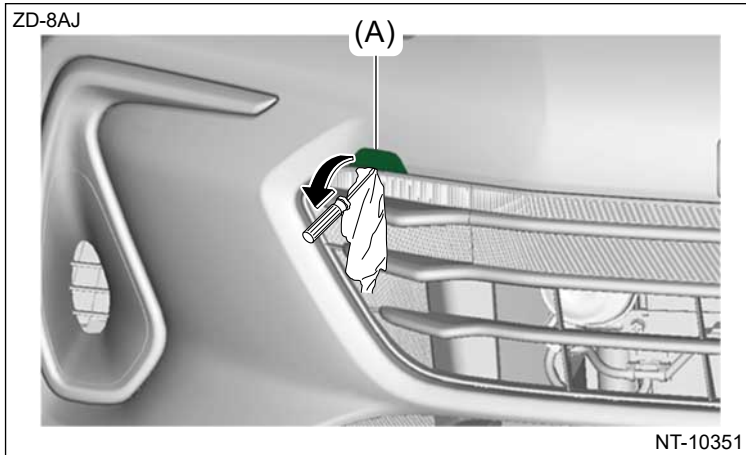
When the vehicle is tied down from vehicle inside, hook the hooks of tie-down chain from vehicle inside, and when the vehicle is tied down from vehicle outside, hook the hooks of tie-down chain from vehicle outside.

For front tie-down hook, use S hook and J hook, and for rear tie-down hole, use S hook, J hook and T hook. T hook can be used only for rear tie-down hole.

## 18. TOWING

Avoid towing vehicles except when the vehicle cannot be driven. For AT models, use a loader instead of towing. When towing other vehicles, pay attention to the following to prevent hook or vehicle damage resulting from excessive weight.

- Do not tow other vehicles with a front tie-down hook.
- Make sure the vehicle towing is heavier than the vehicle being towed.
- When towing the vehicle equipped with EyeSight, operate the meter operation switch to turn OFF the pre-collision brake function. (Check that the pre-collision brake OFF indicator light in the meter lights up.)
- Front  
Using a flat tip screwdriver and a cloth, remove the cover hook front UPR.

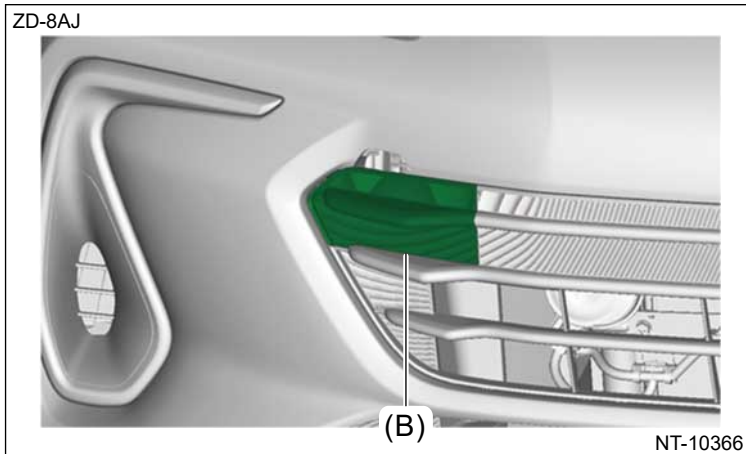


(A) Cover hook front UPR

Remove the cover hook front LWR by pulling toward you by hand.

**Caution:**

**The cover hook front UPR and cover hook front LWR are tether shaped and connected to the bumper face front. When towing the vehicle, remove the cover hook front UPR and cover hook front LWR completely from the bumper face front.**



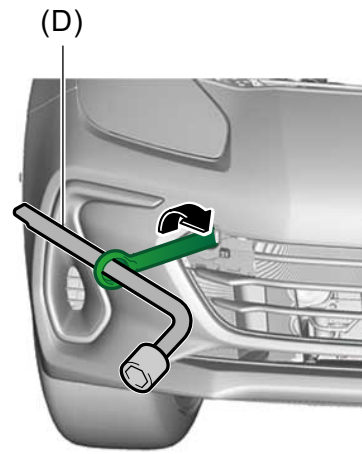
(B) Cover hook front LWR

Install the towing hook (eyebolt).

**Caution:**

**Make sure to detach the towing hook (eyebolt) after towing. If the hook remains attached, airbag may not operate properly when receiving a shock from front side. And it may also affect the crash performance of the vehicle.**

ZD-8AJ



NT-10360

(C) Towing hook (eyebolt)

(D) Wheel nut wrench

• Rear

Remove the cover hook rear, and install the towing hook (eyebolt).

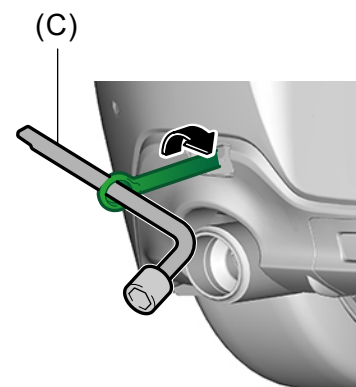
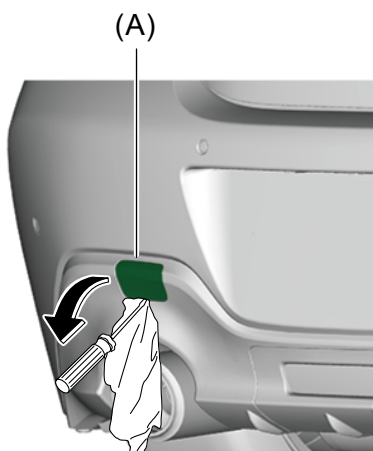
**Caution:**

- The cover hook rear is tether shaped and connected to the bumper face rear. When towing the vehicle, remove the cover hook rear completely from the bumper face rear.
- Make sure to detach the towing hook (eyebolt) after towing. If the hook remains attached, the fuel leakage control function of the fuel pump may not operate properly when receiving a shock from rear side. And it may also affect the crash performance of the vehicle.

**Note:**

The installation procedure for the right side is in the same way as for the left side.

ZD-8AJ



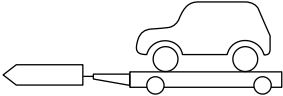

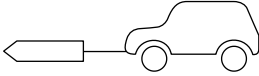
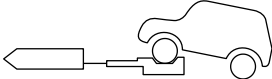
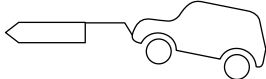
NT-10387

(A) Cover hook rear

(B) Towing hook (eyebolt)

(C) Wheel nut wrench


• Precautions

Towing method	Precautions	MT	AT
Lifting up four wheels (on a trailer)    NT-00023	Use a car carrier truck when the chassis or drivetrain of the vehicle has been damaged in an accident.  <b>Caution:</b> <b>When loading on a carrier transport, make sure to follow the procedures for "CARRIER CAR".</b>  <b>Ref. to</b> <b><a href="#">REPAIR CONTENTS&gt;NOTE &gt; CARRIER CAR.</a></b>	○	○
Rope    NT-00024	<ul style="list-style-type: none"> <li>• Check if both front and rear wheels are rotated normally.</li> <li>• Driving conditions: Driving speed of 20 MPH (32 km/h) or less Driving distance of 19 miles (30 km) or less</li> </ul>	▲	▲
Raising the front wheels    NT-00025		×	×
Lifting up the front wheels    NT-00026	<ul style="list-style-type: none"> <li>• Prohibited, due to potential damage on bumper face front, cover intake front, etc.</li> <li>• Do not raise the vehicle using the bumper face front.</li> </ul>	×	×


Marked ○: OK, Marked ×: Prohibited, Marked ▲: Conditionally OK



**Caution:**

- Place the gear shift lever in neutral position or the select lever in "N range" during towing.
- Do not lift up the rear wheels to avoid unsteady rotation.
- When the ignition switch is turned to "ACC" or "ON" position, check that the steering lock is released and the steering wheel moves freely. (Note that there is no electric power steering assist.)
- Release the parking brake to avoid tire dragging.
- Since the servo brake does not work, be careful that the brake is not applied effectively. (When engine is stopped)
- In case of the malfunction of internal transmission or drive system, lift up four wheels (on a trailer) for towing.
- Do not use towing hook (eyebolt) except when towing.
- Make sure to detach the towing hook (eyebolt) after towing. If the hook remains attached, airbag may not operate properly when receiving a shock from front side. And it may also affect the crash performance of the vehicle.
- Make sure to detach the towing hook (eyebolt) after towing. If the hook remains attached, the fuel leakage control function of the fuel pump may not operate properly when receiving a shock from rear side. And it may also affect the crash performance of the vehicle.
- While being towed with all four wheels on the ground, turn the ignition switch to ON but do not run the engine. (Do not start the engine.)
- If any of the following conditions is met, the headlight beam may deviate. If the headlight beam deviates, perform fuse resetting.  [Ref. to LIGHTING SYSTEM>Auto Headlight Beam Leveler System>OPERATION > FUSE RESET.](#)
  - Difference has occurred to the angle of road surface between when the ignition switch is turned to OFF and when the ignition switch is turned to ON.
  - Difference has occurred to the angle of road surface between when the ignition switch is turned to OFF and when the vehicle speed is 0 km/h (0 MPH).

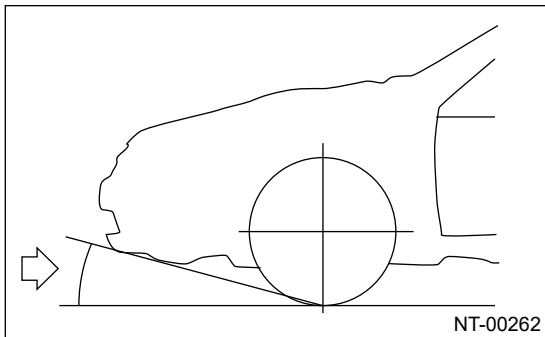
**19. CARRIER CAR****Caution:**

- If any of the following conditions is met, the headlight beam may deviate. If the headlight beam deviates, perform fuse resetting.  [Ref. to LIGHTING SYSTEM>Auto Headlight Beam Leveler System>OPERATION > FUSE RESET.](#)
- Difference has occurred to the angle of road surface between when the ignition switch is turned to OFF and when the ignition switch is turned to ON.
  - Difference has occurred to the angle of road surface between when the ignition switch is turned to OFF and when the vehicle speed is 0 km/h (0 MPH).

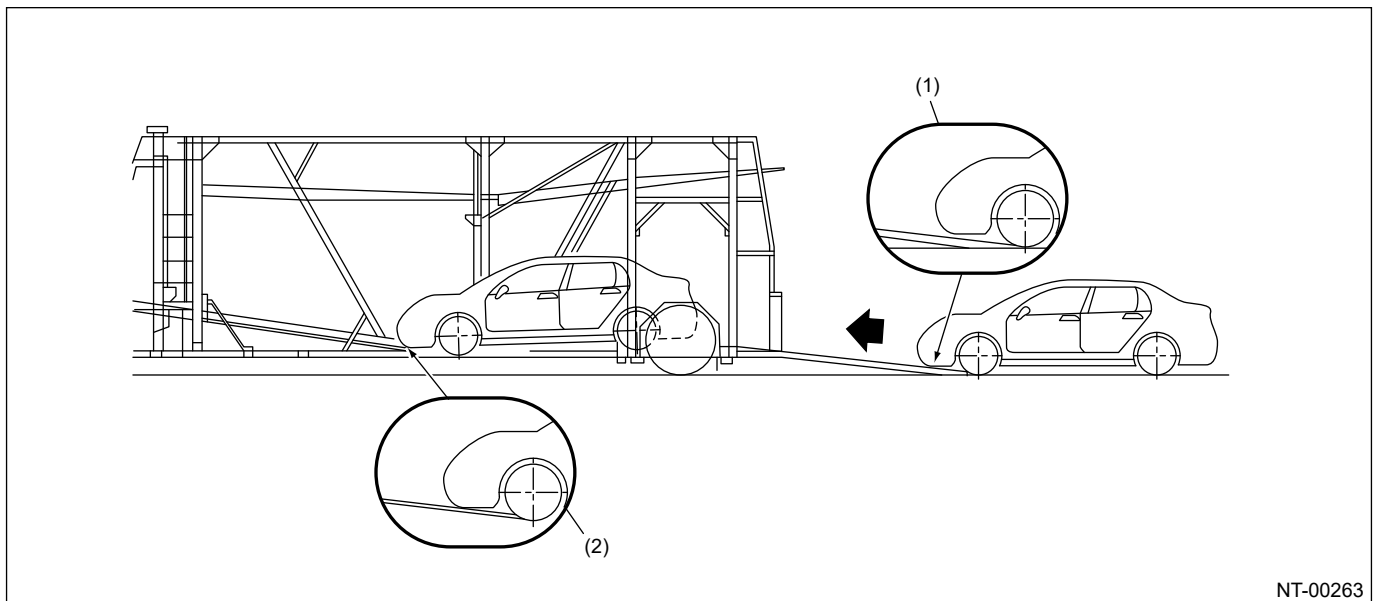
When carrying the vehicle onto a car carrier truck, observe the following precautions.

**Caution:**

- When carrying the vehicle onto a car carrier truck, perform the operation being careful with the gap between the height of the carrier's floor and the vehicle lower side because of little clearance under the front bumper.



- Use a supporting board (rubber) where the clearance is too small.
- Perform the operation being careful with the position shown in the figure below.



- (1) Use a supporting board (rubber) to ensure clearance from the ramp. (2) Before carrying the vehicle completely, lower the lower center floor until it is level to make clearance.

Before lowering the vehicle from the carrier car, perform the following operations.

**Caution:**

**Always perform the following operations before lowering the vehicle from the carrier car. Otherwise, the power unit will rotate reversely, which may cause the damage to the engine, vacuum pump, and transmission.**

1. Start the engine.
2. Set the transmission shift lever or select lever position into driving direction of the vehicle. (When the vehicle drives forward, do not shift the transmission in "R range". When the vehicle drives rearward, do not set the transmission to 1 — 6 speed, or to "D range".)

**Caution:**

**Be sure to perform 2. mentioned above even if the engine cannot be started in some reasons.**

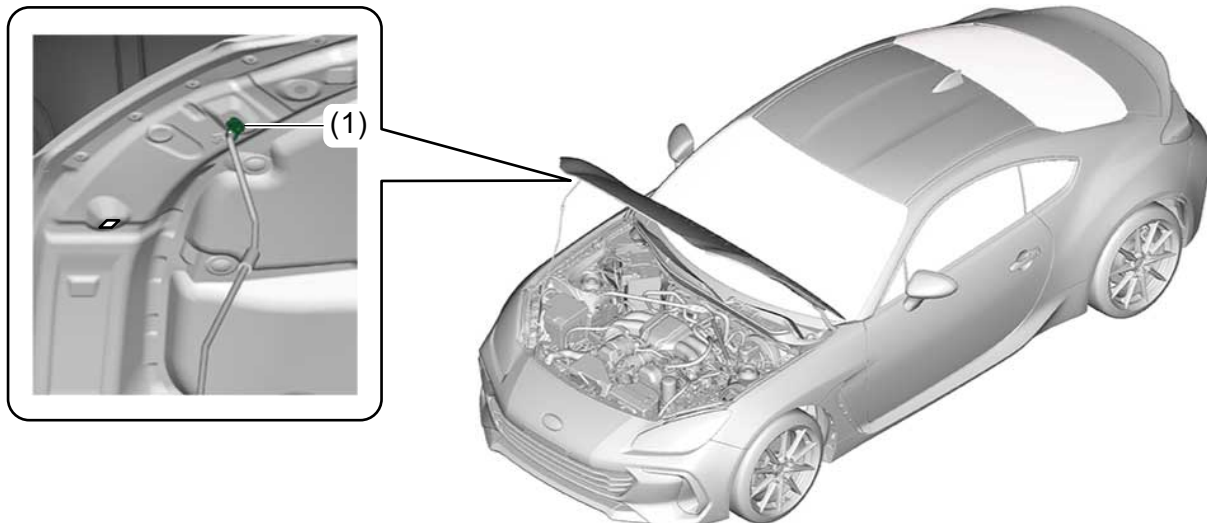
## 20. STAY ASSEMBLY FRONT HOOD

1. Always attach the stay assembly front hood to the normal position when performing works such as inspections and general maintenance.

**Caution:**

- **During the inspection and general maintenance, always be sure to turn the ignition switch to OFF.**
- **At the inspection and general maintenance, do not detach the stay assembly front hood.**
- **Pay special attention to the stay assembly front hood since it may be blown off by a strong wind.**

ZD-8AU

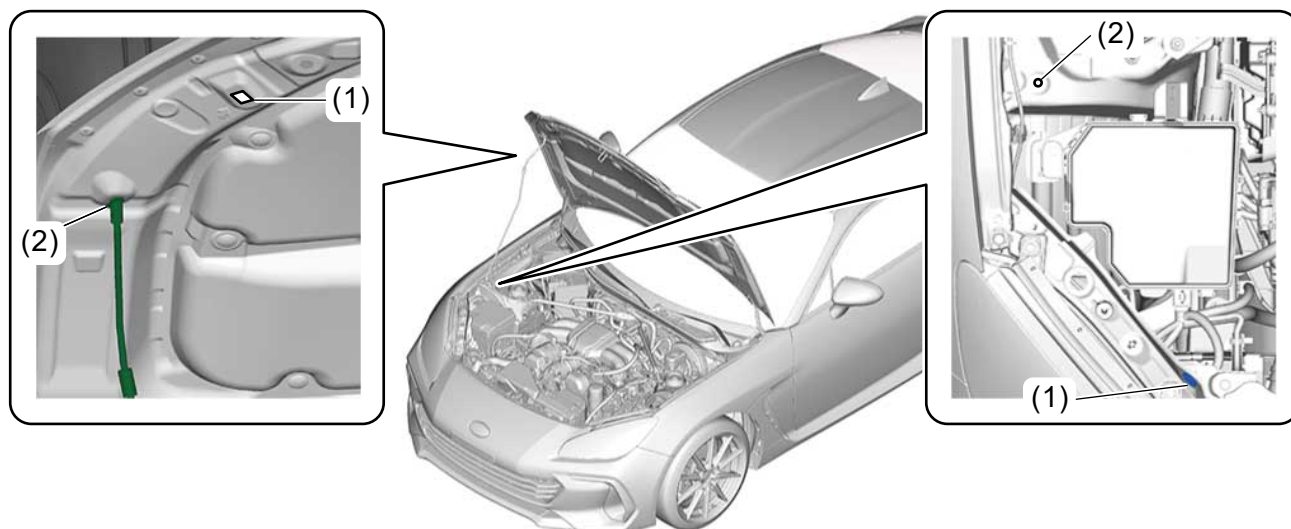


NT-10371

(1) Normal attached position

2. When wider opening of the front hood is necessary, set the installation positions on front hood side and engine room side of the stay assembly front hood to full open positions as shown in the figure.

ZD-8AU



NT-10372

(1) Normal attached position

(2) Installation position at full open

## 21. SCAN TOOL

Using scan tools will greatly improve the efficiency of repairing electrically controlled parts. Subaru Select Monitor can be used to diagnose the engine, VSC (VDC), air conditioner and other electrically controlled parts.

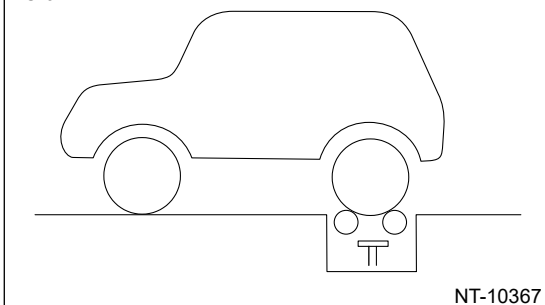
## 22. SPEEDOMETER TEST

1. Set the vehicle on speedometer tester.

### Caution:

- Fix the vehicle using a pulling metal (chain or wire).
- Be sure to turn OFF the pre-collision brake function.
- Do not operate the steering wheel.
- Avoid abrupt operations of the acceleration pedal, brake pedal and clutch pedal.
- Perform the measurement while driving the vehicle at 50 km/h (31 MPH) or less and complete within one minute.

ZC-6\*\*

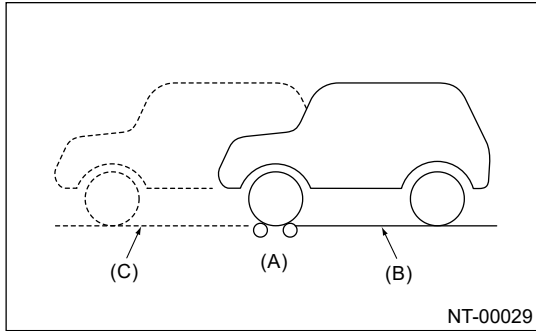


NT-10367

2. Conduct the speedometer test work.

## 23. BRAKE TEST

1. Keep the front or rear wheels on the ground during measurement.



(A) Brake tester

(B) Position for measuring front wheel

(C) Position for measuring rear wheel

2. When the brake dragging force is large
  - Check the dragging of brake pad or brake shoe.

#### Judgment standards:

	Braking force
Rear wheel total	10% or more of load on front or rear wheels
Difference between right and left wheels	8% or less of load on front or rear wheels
Grand total	50% or more of vehicle weight at the time of test

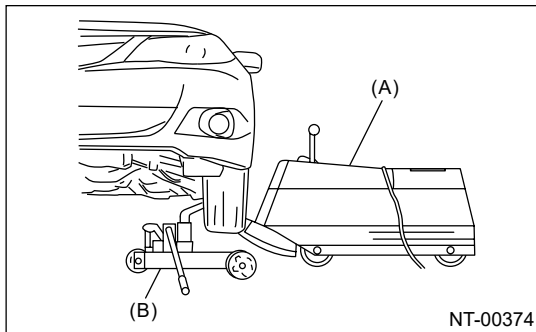
- When measurement is difficult to carry out because both of front wheels are locked, brake force measurement in this condition conforms to standard grand total.

## 24. ON THE CAR WHEEL BALANCING

### Caution:

- Be sure to carry out the procedures after measuring the balance of each single tire.
- Set the vehicle so that the front and rear wheels are the same height.
- Make sure that the VSC (VDC) is deactivated.
- Release the parking brake during measurement.
- Rotate each wheel by hands, and make sure it rotates without dragging.
- Do not operate the clutch quickly and do not accelerate or decelerate suddenly during work.

1. Jack up the non-measuring side (front wheels or rear wheels) and set the rigid racks.
2. Set the pickup stands to two wheels of the measuring side (front wheels or rear wheels).



(A) Balancer body

(B) Pickup stand (right and left)

3. For drive wheel, drive the tires with engine for measurement.
4. For non-drive wheel, drive the tires from the on the car wheel balancer for measurement.

## 25. Bluetooth CONNECTION PROCEDURE BETWEEN HEAD UNIT (AUDIO WITHOUT NAVIGATION) AND SMARTPHONE (ONLY FOR MODEL WITH TELEMATICS)

Perform the following operations to allow the head unit to obtain the time information.

- When Android mobile phone is used
  1. Establish Bluetooth connection between the head unit and Android mobile phone.

**Note:**

**Bluetooth connection will be established when the blue text "Connected" is displayed in the screen of the head unit.**

2. Delete the connecting device after 10 seconds passed.
- When iPhone is used
    1. Establish Bluetooth connection between the head unit and iPhone.
    2. Operate iPhone to go to the connecting device "Subaru BT" and turn the item "Show Notifications" ON.
    3. Cancel Bluetooth connection, and establish Bluetooth connection again.
    4. Delete the connecting device after 10 seconds passed.